

What is claimed is:

1. An electric motor screw driver system, comprising:
a driver having a first signal generation means for
5 generating a rotation start signal representing to operate
a fastening operation of the driver and a second signal
generation means for generating a rotation stop signal
denoting a stop of the fastening operation;
a power controller for controlling to operates the
10 fastening operation of the driver by supplying electric
power to the driver in response to the rotation start
signal and ceasing the supply of electric power to the
driver in response to the rotation stop signal;
a driver monitoring means for monitoring the
15 fastening operation of the driver based on pre-determined
fastening information, the rotation start signal and the
rotation stop signal in order to determine whether the
fastening operation is appropriately completed or not,
generates information signal based on a result of
20 monitoring; and
a display unit for receiving the information signal
from the driver monitoring means and displaying the
information signal.

- 25 2. The system as recited in claim 1, wherein the
driver monitoring means includes determination means for
determining one appropriate and complete cycle of fastening

operation based on a time interval between the rotation start signal and the rotation stop signal.

3. The system as recited in claim 2, wherein the
5 predetermined fastening information includes a
predetermined target time range and the determination means
generates a completion signal representing the one
appropriate and complete cycle when the time interval is
fallen in the predetermined target time range.

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4. The system as recited in claim 3, wherein the
driver monitoring means includes computation means for
performing at least one test mode to determine the
predetermined target time range.

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5. The system as recited in claim 1, wherein the
driver monitoring means further includes:

storage means for storing operation information of a
plurality of modes and predetermined fastening information
20 for analyzing fastening operation of the driver;

a user control panel for generating a selection
signal for selecting a mode among a plurality of modes; and

computation means in response to the selection signal
for performing a selected mode by using the corresponding
25 operation information.

6. The system as recited in claim 5, wherein a

plurality of the modes includes an operation mode for monitoring the fastening operation of the driver by comparing a time interval between the rotation start signal and the rotation stop signal and the predetermined fastening information to thereby generating a completion signal representing a completion of fastening operation.

7. The system as recited in claim 6, wherein a plurality of the modes further includes:

10 a counting mode for setting a target number of fastening operations and counting the number of the completion signal to generate a second completion signal when the number of completion signal is identical to the target number;

15 a setting mode for testing a target object to be subjected to the fastening operation to obtain the predetermined fastening information including the predetermined target time range; and

an initial mode for initializing the predetermined fastening information in the storage means.

8. The system as recited in claim 7, wherein the setting mode includes:

25 a first setting mode for receiving a test rotation start signal and a test rotation stop signal for the target object from the driver;

a second setting mode for determining the target time

range by using a time interval between the test rotation start signal and the test rotation stop signal; and

a third setting mode for storing the target time range into the storage means.

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9. An electric motor screw driver system, comprising:

a driver having a first signal generation means for generating a rotation start signal representing operate a fastening operation of the driver and a second signal
10 generation means for generating a rotation stop signal denoting a stop of the fastening operation;

a power controller for controlling to operate the fastening operation of the driver by supplying electric power to the driver in response to the rotation start
15 signal and ceasing the supply of electric power to the driver in response to the rotation stop signal;

a driver monitoring means for monitoring the fastening operation of the driver based on pre-determined fastening information, the rotation start signal and the
20 rotation stop signal in order to determine whether the fastening operation is appropriately completed or not, generates information signal based on a result of monitoring;

an operation processing unit for outputting the
25 result information signal from the driver monitoring means to external peripheral apparatus and receiving operation information signal from the external peripheral apparatus

in order to cooperate with the external peripheral apparatus; and

a display unit for receiving the information signal from the driver monitoring means and displaying the
5 information signal.

10. The system as recited in claim 9, wherein the peripheral apparatus includes a convey belt, an electric motor screw driver, a personal computer or a remote control
10 terminal.

11. The system as recited in claim 9, wherein the driver monitoring means includes determination means for determining one appropriate and complete cycle of fastening
15 operation based on a time interval between the rotation start signal and the rotation stop signal.

12. The system as recited in claim 9, wherein the predetermined fastening information includes a
20 predetermined target time range and the determination means generates a completion signal representing the one appropriate and complete cycle when the time interval is fallen in the predetermined target time range.

25 13. The system as recited in claim 9, wherein the driver monitoring means includes computation means for performing at least one test mode to determine the

predetermined target time range.

14. The system as recited in claim 9, wherein the driver monitoring means further includes:

5 storage means for storing operation information of a plurality of modes and predetermined fastening information for analyzing fastening operation of the driver;

a user control panel for generating a selection signal for selecting a mode among a plurality of modes; and

10 computation means in response to the selection signal for performing a selected mode by using the corresponding operation information.

15 15. The system as recited in claim 9, wherein a plurality of the modes includes an operation mode for monitoring the fastening operation of the driver by comparing a time interval between the rotation start signal and the rotation stop signal and the predetermined fastening information to thereby generating a completion
20 signal representing a completion of fastening operation.

16. A driver monitor in an electric motor screw driver system, where in the electric motor screw driver system including a driver having a first signal generation
25 means for generating a rotation start signal representing operate a fastening operation of the driver and a second signal generation means for generating a rotation stop

signal denoting a stop of the fastening operation and a power controller for controlling to operates the fastening operation of the driver by supplying electric power to the driver in response to the rotation start signal and ceasing the supply of electric power to the driver in response to the rotation stop signal, the driver monitor, comprising:

a driver monitoring means for monitoring the fastening operation of the driver based on pre-determined fastening information, the rotation start signal and the rotation stop signal in order to determine whether the fastening operation is appropriately completed or not, generates information signal based on a result of monitoring;

an operation processing unit for outputting the result information signal from the driver monitoring means to external peripheral apparatus and receiving operation information signal from the external peripheral apparatus in order to cooperate with the external peripheral apparatus; and

a display unit for receiving the information signal from the driver monitoring means and displaying the information signal.

17. The system as recited in claim 16, wherein the driver monitoring means includes determination means for determining one appropriate and complete cycle of fastening operation based on a time interval between the rotation

start signal and the rotation stop signal.

18. The system as recited in claim 17, wherein the predetermined fastening information includes a predetermined target time range and the determination means generates a completion signal representing the one appropriate and complete cycle when the time interval is fallen in the predetermined target time range.

10 19. The system as recited in claim 17, wherein the driver monitoring means includes computation means for performing at least one test mode to determine the predetermined target time range.

15 20. The system as recited in claim 16, wherein the driver monitoring means further includes:

storage means for storing operation information of a plurality of modes and predetermined fastening information for analyzing fastening operation of the driver;

20 a user control panel for generating a selection signal for selecting a mode among a plurality of modes; and

computation means in response to the selection signal for performing a selected mode by using the corresponding operation information.

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